



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/742,931	12/23/2003	Hidesato Saruwatari	247112US2SRD	7368
22850	7590	06/30/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KALAFUT, STEPHEN J	
		ART UNIT	PAPER NUMBER	1745

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/742,931	SARUWATARI ET AL.	
	<b>Examiner</b> Stephen J. Kalafut	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 23 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12 Dec 2003</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____ .

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are confusing since the sheet is recited as “hydrogen gas permeable”, but the values are given for “He gas permeability”, the symbol “He” normally understood to refer to helium, a different gas. The phrase “at 30 °C” would be inconsistent with the term “STP”, because the “standard temperature” of “STP” is normally zero °C (273.15 °K). The term “electrolysis solution” is unclear because the claimed device is not an electrolysis cell, but a current-producing cell. The phrase “electrolytic solution” is suggested.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3-9 and 11-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-6, 9-13 and 21-32 of

copending Application No. 10/387,483 in view of Duprey *et al.* (US 6,887,614). Claim 23 of Serial No. 10/387,483 (hereinafter referred to as “‘483”) recites a battery including a battery case, which would be a “negative electrode container” since the electrode would be located therein; and a “water repellent member which permeates hydrogen gas, and is provided in an opening of the battery case”, which would correspond to the present “hydrogen gas permeable sheet”. Claim 23 of ‘483 also recites present ranges for water repellence and “He gas permeability”. The values for these properties, to the extent that they are understood for the present claims, are thus the same for the claims of ‘483. The claims of the ‘483 application also recite nitrate and/or sulfate ions in the electrolyte (claim 11), positive and negative electrodes (claim 25), a separator (claim 13) that would be placed between the electrodes, the thickness of the hydrogen-permeable sheet (claim 10), and a gel within the anode (claim 26). The claims of the ‘483 application do not recite either the distance between the positive electrode and the hydrogen gas permeable sheet decreasing toward the side wall of the container, or the recesses on this sheet facing the electrode. Duprey *et al.* disclose a cell that includes a sealing disk (20) that in turn includes a membrane portion (23), which is permeable to hydrogen (column 11, lines 38-42). The membrane portion also includes a groove (210) whose depth may be optimized according to the desired threshold pressure at which the cell is vented (column 10, lines 64-68). By extending in an arc (column 11, lines 7-14), the groove would correspond to the present “recesses”. Because this sealing disk and membrane would allow hydrogen permeation, but still provide a safety function if internal gas pressure becomes excessive, it would be obvious to construct the cell of the ‘483 application according to the design of Duprey *et al.*, and use the

material of the hydrogen-permeable water repellent member of the '483 application to make the sealing disk of Duprey *et al.*

This is a provisional obviousness-type double patenting rejection.

Claims 2 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-6, 9-13 and 21-32 of copending Application No. 10/387,483 in view of Duprey *et al.* as stated above, and further in view of Schumm (US 4,469,764). Neither the claims of the '483 application nor Duprey *et al.* recite the present "liquid gasket" used to secure the hydrogen permeable member. Schumm discloses bodies of sealant (18, 30) used to secure a closure member (12) within a cylindrical cell. This would correspond to the present "liquid gasket". To obtain the added mechanical stability and protection against leaks, it would be obvious to use the sealant bodies of Schumm with the sealing disk Duprey *et al.*, modified as discussed above to be made of the hydrogen permeable material claimed in the '483 application

This is a provisional obviousness-type double patenting rejection.

The disclosure is objected to because of the following informalities: The terms "electrolysis solution" (for example, on page 12) and "He gas permeability" (for example, on page 28) also occur in the specification. Appropriate correction is required.

Art Unit: 1745

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Licht *et al.* (US 5,472,807) disclose a cell electrolyte with sulfate or nitrate ions. Bergum *et al.* (US 3,741,813), King (US 3,970,479) and Wiacek *et al.* (US 5,080,985) disclose cells with sealing members that are hydrogen permeable. Miura *et al.* (US 4,861,688) disclose a cell with an anode that contains gel.

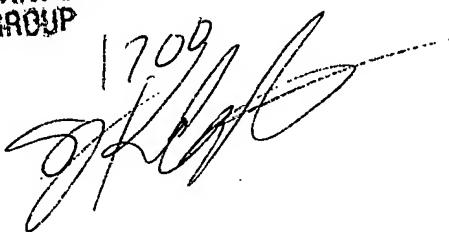
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sjk

STEPHEN KALAFUT  
PRIMARY EXAMINER  
GROUP

A handwritten signature in black ink, appearing to read "SK". Above the signature, the name "1709" is written vertically.